WHAT IS CLAIMED IS:

1. A method of increasing the production of a biologically active compound in a cell wherein the biologically active compound is derived at least in part from methylmalonyl-CoA, the method comprising the step of inhibiting the activity of methylmalonyl-CoA mutase.

2. The method of claim 1 wherein the biologically active compound is an immunosuppressant.

3. The method of claim 2 wherein the immunosuppessant is rapamycin, FK520, or ascomycin.

4. The method of claim 1 wherein the biologically active compound is an antifungal agent.

5. The method of claim 4 wherein the antifungal agent is rapamycin, candicidin or soraphen.

6. The method of claim 1 wherein the biologically active compound is an antiparasitic agent.

7. The method of claim 6 wherein the antiparasitic agent is avermectin.

8. The method of claim 1 wherein the biologically active compound is an antibiotic.

9. The method of claim 8 wherein the antibiotic is a polyketide antibiotic.

10. The method of claim 9 wherein the polyketide antibiotic is a macrolide polyketide antibiotic.

11. The method of claim 10 wherein the macrolide polyketide antibiotic is erythromycin, tylosin, niddamycin, spiramycin, oleandomycin, methymycin, neomethymycin, narbomycin, pikromycin, or lankamycin.

12. The method of claim 1 wherein the biologically active compound is an animal feed promotant.

13. The method of claim 12 wherein the animal feed promotant is a monensin.

14. The method of claim 12 wherein the monensin is monensin A or monensin B.

15. The method of claim 1 wherein the cell is a prokaryotic cell.

16. The method of claim 15 wherein the prokaryotic cell is a bacterial cell.

17. The method of claim 16 wherein the bacterial cell is *Saccharopolyspora, Aeromicrobium or Streptomyces.*

18. The method of claim 17 wherein the bacterial cell is a *Saccharopolyspora erythraea or an Aeromicrobium erythreum.*

19. The method of claim 18 wherein the bacterial cell is *Streptomyces fradiae, Streptomyces avermitilis, Streptomyces cinnamonensis, Streptomyces antibioticus, Streptomyces venezuelae, Streptomyces violaceoniger, Streptomyces hygroscopicus, Streptomyces spp.* FR-008, or *Streptomyces griseus.*

20. The method of claim 1 wherein the cell is a eukaryotic cell.

21. The method of claim 20 wherein the eukaryotic cell is a plant cell.

22. The method of claim 20 wherein the eukaryotic cell is an animal cell.

23. The method of claim 22 wherein the animal cell is a mammalian cell.

24. The method of claim 1 wherein inhibiting is accomplished by reducing the level of a co-factor necessary for methylmalonyl-CoA mutase activity.

25. The method of claim 24 wherein the co-factor is coenzyme B12.

26. The method of claim 25 wherein the level of coenzyme B12 is reduced by inhibiting the transcription of a *cob* gene.

27. The method of claim 1 wherein inhibiting the activity of methylmalonyl-CoA mutase is accomplished by inhibiting the transcription of a gene for methylmalonyl-CoA mutase.

28. The method of claim 27 wherein inhibiting the transcription of a gene for methylmalonyl-CoA mutase is accomplished by mutating the gene for methylmalonyl-CoA mutase such that the mutated gene does not encode an enzymatically active methylmalonyl-CoA mutase.

29. The method of claim 28 wherein mutating is accomplished by mutating a wild type methylmalonyl CoA gene *in vitro*.

30. A method of increasing the production of an antibiotic in a bacterial cell wherein the antibiotic is derived at least in part from methylmalonyl-CoA, the method comprising the step of inhibiting the activity of methylmalonyl-CoA mutase in the bacterial cell.

31. The method of claim 30 wherein the antibiotic is a polyketide macrolide antibiotic.

32. The method of claim 31 wherein the polyketide macrolide antibiotic is erythromycin.

33. The method of claim 32 wherein the bacterial cell is a *Saccharopolyspora* or *Aeromicrobium.*

34. The method of claim 33 wherein the bacterial cell is *Saccharopolyspora erythraea* or *Aeromicrobium erythreum.*